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Incorporating Principles of Disability Justice into American Medical Education

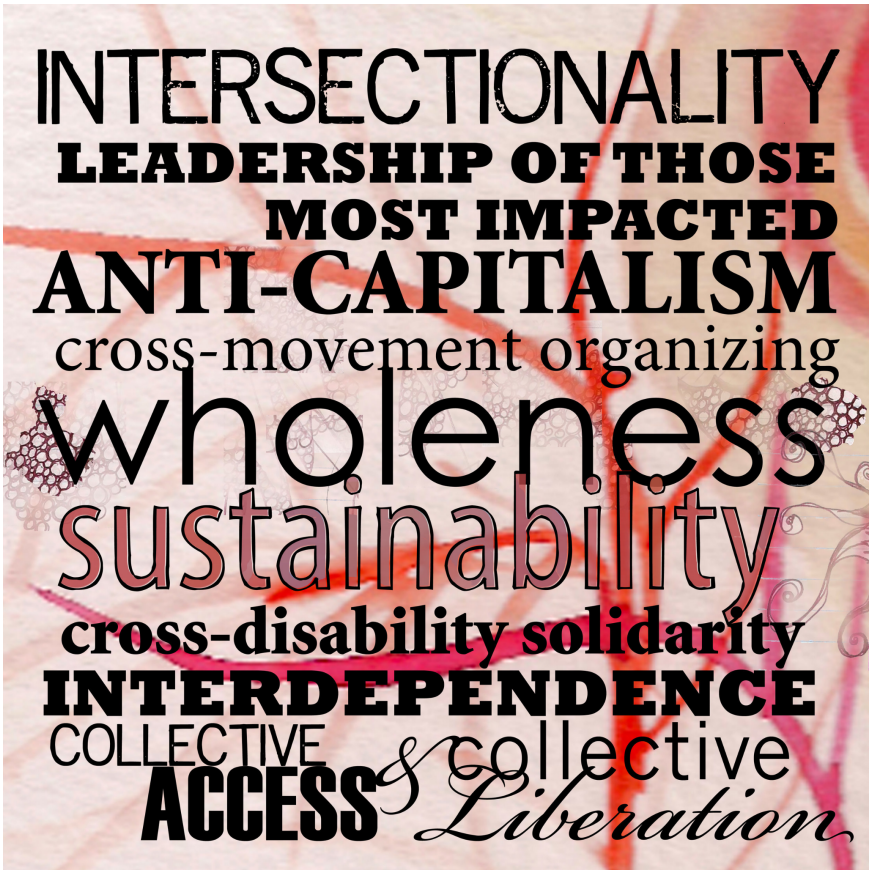
The American medical system is an inherently inaccessible, ableist, and discriminatory institution. This is reflected in medical education, from premedical and medical curricula to residency and fellowship training. In a country founded off of the labor of slaves, entire fields of medicine were pioneered by racist white men who experimented on slaves without their consent. For instance, J. Marion Sims, who was credited with pioneering the field of gynecology, made his medical breakthoughs by experimenting on female slaves without the use of anesteisa (Bachynski). These racist, repulsive beliefs still deeply affect the contemporary American medical system, with black mothers in the United States dying three to four times the rate of white mothers, according to the Centers for Disease Control and Prevention (Chakraborty). African-Americans are also falsely assumed to have a higher pain tolerance, with doctors being less likely to provide African-Americans with pain relief. Likewise, the legacy of eugenics and the forced sterilization of disabled people is still pervasive within American health care, as disabled individuals face challenges accessing health care and have lower rates of medical screening (Lezzoni).

Depiction of J. Marion Sims Experimenting on Slaves

[Image Description: A color painting of three white men and three black slaves in a wooden room. The center of the painting features the side view of a slave who is sitting on top of her legs on a table with a white table cloth. She is wearing a blue dress and red bandana, and her arms and hands are covering her chest and lap. She has a serious facial expression. One of the men, J. Marion Sims, is standing across from her. His arms are crossed, and he is holding a medical instrument. He is wearing a black suit, gray pants, and black shoes, and has a serious facial expression. The other two men are standing behind her, one wearing a black suit with black pants and the other wearing a silver suit with dark blue pants. The man in the black suit is holding a light green chair behind the table the woman is sitting on, and the man in the gray suit is observing from the side, with his left hand resting on his hip. Both men have serious facial expressions. In the background (to the slave's left), is a hanging white sheet, and at the far left of the painting (leaning in from behind the sheet), are two other slaves observing the woman on the

table with concerned facial expressions. One of the women is wearing a purple dress and the other an orange dress and blue bandana. In front of the sheet is a hanging green lamp, and at the front-left of the painting, behind the man in the silver suit, is a wooden bucket.]

The capitalist nature of medical education and privatization of insurance has contributed to these disparities, as BIPOC Americans have higher rates of being uninsured (Artiga et al.). Although social programs like Medicare and Social Security Disability Insurance help make health care accessible for more Americans, these programs have not been expanded enough. Additionally, a study on women with breast cancer showed that people on Medicare and Social Security Disability Insurance were less likely to receive surgery, radiotherapy, and axillary lymph node dissection, adjusting for risk level, and had lower survival rates, adjusting for hazard ratio (McCarthy et al.). This points to the issues present in the American medical system beyond more tangible problems like insurance, including a lack of representation of disabled Americans in medicine and failing to adequately incorporate disability into medical education. In order to provide more equitable care for all Americans, we must implement the principles of disability justice into medical education, including anti-capitalist policy, intersectionality, and leadership of those most impacted (10 Principles of Disability Justice).

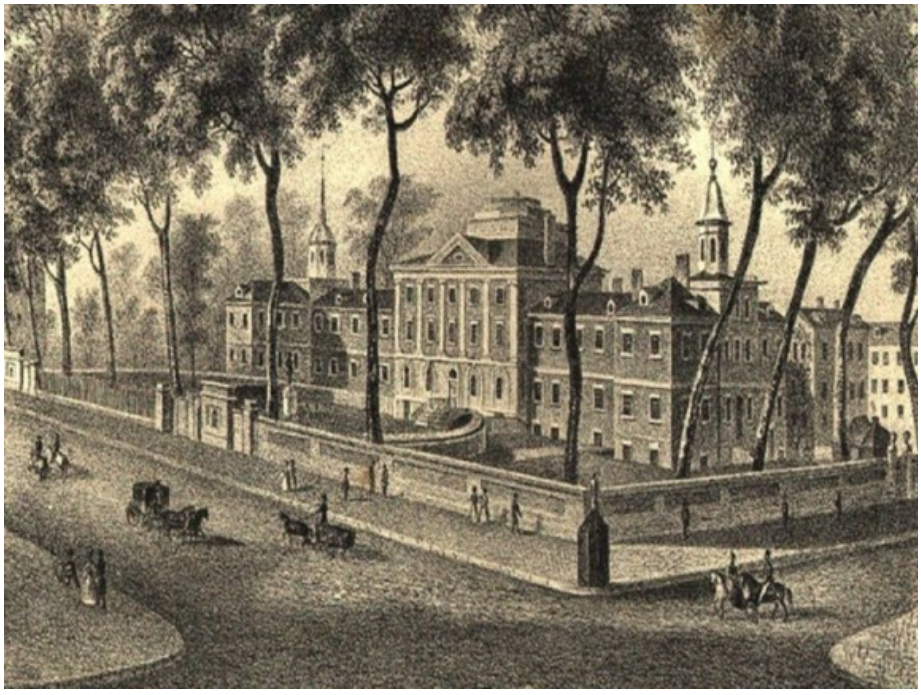


Ten Principles of Disability Justice

[Image Description: A color picture of different phrases over a pink background with abstract shapes in red and purple. Each line of words/phrases is in a different font. From top to bottom: "intersectionality / leadership of those / most impacted / anti-capitalism / cross-movement organizing / wholeness / sustainability / cross-disability solidarity / interdependence / collective access & collective liberation."]

The first medical school in North America was opened in 1765 at the College of Philadelphia (now the Perelman School of Medicine at the University of Pennsylvania), when the thirteen colonies were still under British rule (Fee). However, it wasn't until the late nineteenth century that scientifically-based medical education was introduced in the United States (Fishbein and Harrison). This shift led a growing number of individuals to believe that students should

receive a broad undergraduate education, with a firm grasp of the natural sciences, before beginning their medical education (Fishbein and Harrison). Johns Hopkins University was established in 1876, and later its school of medicine in 1893, causing the system of separating undergraduate and medical education to eventually become the norm throughout the country (Fishbein and Harrison). The intention of requiring an undergraduate education before studying medicine was to train physicians who had a solid foundation in the natural sciences and an appreciation for the humanistic aspect of medicine from courses in foreign languages (namely French and German), the classics, and philosophy (Fishbein and Harrison). This has led to the present-day premedical requirements, consisting of a year of biology, two years of chemistry (including organic chemistry), a year of physics, and two semesters of writing intensive courses, although the past humanities requirements like philosophy and classics have been dropped (Fishbein and Harrison).



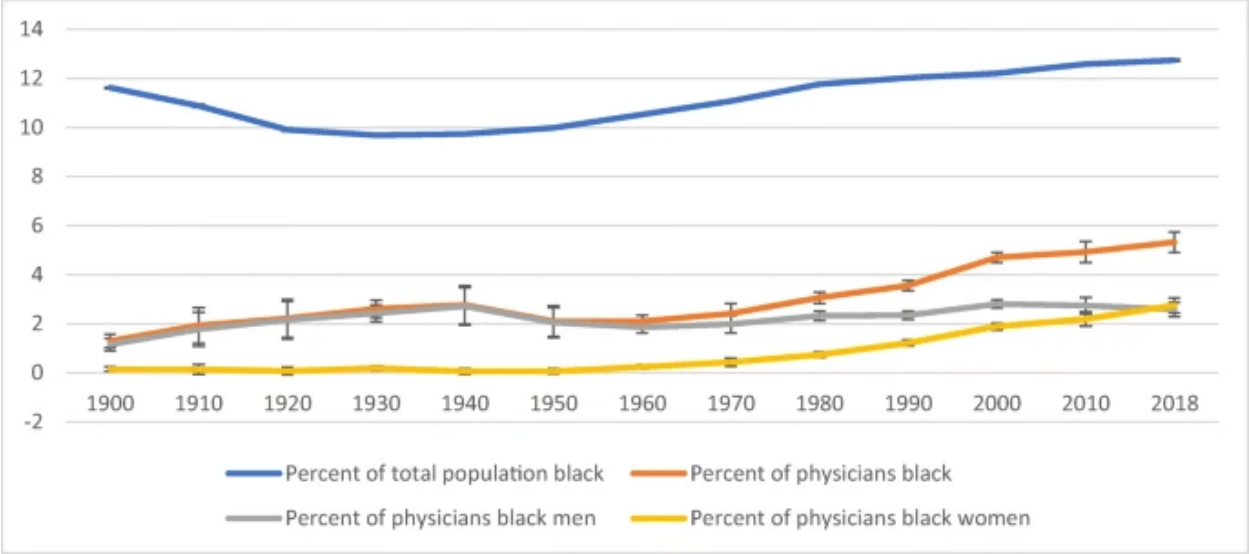
The Medical School at the College of Philadelphia

[Image Description: A black and white painting of the medical school at the College of Philadelphia. The center of the painting shows a (mainly) three-story building that has tall white pillars and a fourth floor in the center portion and two fairly small towers on either side. The main building appears to connect to other buildings on the right of the painting. A lawn and tall deciduous trees surround the building, enclosed by a gate. In front of the gate is a sidewalk with people walking by and a street where people are traveling by horse. Other sidewalks can be seen at the far left and right of the painting, with a few people walking on the sidewalk on the left.]

The current premedical requirements cause American medical education to be less accessible and are outdated, as they do not fully encompass the broad study of human health. Despite a predicted shortage of between 37,800 and 124,000 doctors by 2034, the basic science subjects required by medical schools have become a way to "weed out" students, many of whom would have become excellent physicians (AAMC Report). With the inequitable nature of American education, students who are privileged to attend private high schools or wealthy public high schools have access to advanced college-level science courses, which give them an advantage over students from less privileged backgrounds. Without transforming American education by adequately funding all public schools instead of basing public school funding on local taxes and standardized testing, college merely gives the illusion of a level playing field. As a result, placing so much emphasis on the natural science premedical requirements makes it less accessible for students without as much scientific background to get admitted into medical school.

A longitudinal study conducted at Stanford University asked students who noted that they wanted to go to medical school on a freshmen survey about their level of interest in becoming a physician at the beginning of their freshman year and the end of their sophomore year (Barr et

al.). The study revealed that students underrepresented in medicine had a greater decline in interest in going to medical school at the end of their sophomore year, despite there being no association between academic potential determined by SAT scores and the decline in interest (Barr et al.). A similar study at University of California Berkeley found that chemistry courses disproportionately discouraged students underrepresented in medicine from continuing a premedical track (Barr et al.). As African-Americans constitute 13% of the American population but only 5% of physicians, medical schools need to reconsider how they assess premedical students and what attributes they value (Ly).



Percent of black physicians and black proportion of total population from 1900 to 2018. From "Historical Trends in the Representativeness and Incomes of Black Physicians, 1900–2018."

[Image Description: A graph showing the percent of physicians who are black, percent of physicians who are black men, percent of physicians who are black women, and percent of total population that is black from 1900 to 2018. The percent of black people in the total population has hovered around 12% from 1900 to 2018, the percent of physicians who are black has increased from about 1% to about 5%, the percent of physicians who are black men has

increased from about 1% to about 2.5%, and the percent of physicians who are black women has increased from about 0% to about 2.5%.]

If medical schools recognized the principle of disability justice of "recognizing wholeness," they would value students' potential to be excellent providers, even if they don't excel in their basic science coursework as much as other students. A study conducted on Australian medical students showed that students who performed the best in their premedical science courses scored the worst on standardized empathy tests (Barr). Shifting to scientific-based medical education in the late nineteenth century was an important shift to further the field, but so much emphasis on the basic sciences has caused Americans to lose sight of what it means to be a physician. A good doctor is someone who has a strong scientific foundation but knows how to effectively communicate that information with patients and address their concerns. Patients are not just anatomical machines to diagnose, but people with complex identities and experiences shaping their health.

Another important consideration is that requiring an undergraduate degree to study medicine is inaccessible in and of itself in the United States. In other developed countries, such as Germany, Japan, and Argentina, students apply to medical school directly from high school, where they complete a 6-year program, and the cost of medical education is far lower (Centeno; Kozu; Zavlin et al.). On the other hand, the high cost and long duration of American medical education dissuades many students from pursuing their interests, as the amount of debt most Americans have to take on to complete their medical education is daunting. To build a more equitable future, higher education must be made free to make it more accessible to all Americans to pursue a medical education. Despite the additional time required for American medical education, medical schools generally do not require courses beyond the basic sciences and two

semesters of English. This is a lost opportunity and goes against the original purpose of separating premedical and medical education to train well-rounded physicians with deep scientific knowledge and an appreciation for the humanities. If the United States maintains the requirement of earning a bachelor's degree prior to medical school, medical schools should require prior exposure to subjects like medical ethics and public health to raise a generation of physicians who have a more comprehensive understanding of both the scientific and social determinants of health.

Sidney Kimmel Medical College (SKMC) is actively addressing many of these issues throughout different stages of medical education. Over the last few years they have established an early assurance program with Haverford College for students to gain conditional acceptance to SKMC during their junior year of college. Students accepted into the program are not required to take physics or the second semester of organic chemistry, and instead enroll in at least three courses "with a focus on public health, community engagement, social engagement and health equity" (Haverford-Jefferson Scholars). In encouraging students to study the social determinants of health alongside the natural sciences, SKMC deemphasizes the basic sciences as a sole measure of readiness for medical school and better equips students to be effective clinicians. This program remains inaccessible to undergraduate students as whole since only students at Haverford College are eligible to apply, although it can serve as a model of how to reform premedical education as a whole.

After finishing undergraduate education at Haverford, students begin their studies at SKMC while pursuing a Population Health Scholarly Inquiry Track alongside all four years of their medical education. One current SKMC student, Rory Seymour, has collaborated with various medical faculty to incorporate disability studies into SKMC's standard education. As

activist and disabled physician Shane Neilson explains, “medicine functions according to the basic idea that ‘healthy’ is ‘normal’ and ‘unhealthy’ is ‘abnormal.’” Medical schools traditionally teach students about the workings of “normal bodies” before explaining how diseases can arise. Although this progression may be necessary to understand how a body usually functions before introducing more complex conditions, instructors need to refrain from assigning certain bodies and minds as “normal” and others as “abnormal.” As notions of normaly were used by eugenisists to justify discrimination and forced sterilization of disabled people, “physicians implicitly experience revulsion at illness among their colleagues because they are trained to see abnormal as unhealthy” (Neilson).

Seymour, in collaboration with Physical Medicine and Rehabilitation Dr. Nethra S Ankam, is working to address this issue by implementing disability into SKMC’s case-based learning. SKMC has case-based learning twice a week, where groups of 9-10 students meet with a faculty member to discuss a clinical case related to what they are studying that week (Undergraduate Medical Education). While these sessions are primarily used for applying physiology concepts with practice cases, they sometimes present the opportunity to integrate social factors of health that could affect a patient’s treatment, such as being undocumented or experiencing homelessness. By incorporating more patients with disabilities into case-based learning, medical students can learn from each other and be better prepared to treat patients with diverse disabilities and backgrounds. SKMC also offers two humanities electives during the first two years of medical school, with an optional disability studies elective focused on advocacy.

In addition, Seymour is considering how to continue conversations surrounding disability beyond the preclinical years of medical school. Building on the experience medical students will receive from brainstorming ways to help disabled patients during case-based learning, a group of

SKMC students is working on implementing questions third and fourth year medical students can use when taking patient histories on their clinical rotations. They are also developing meetings for third and fourth year medical students to reflect on biases, disabilities, and other relevant topics from their clinical rotations. This will allow medical students to continue to be engaged in disability studies and make connections between disability justice and their clinical work. By forefoning disabilities during both the preclinical and clinical years of medical school, students will gain an appreciation for how diverse people are, rather than limiting disabilities to pathological abnormalities to treat. Seymour's strategies to incorporate disability studies compliments SKMC's regular educational program, rather than adding on significant amounts of time to an already full medical curriculum, and he is producing videos to share with medical residents at Jefferson to continue to encourage physicians to consider disability justice in their work. A study by Borowsky et al. created a mandatory 2-hour session related to disability and ableism at the University of California San Francisco School of Medicine, including "privilege awareness, student-led discussions, and intervention brainstorming for overcoming health care barriers/biases." They found that this relatively short session led to "significant increases in students' self-reported understanding of ableism ($p < .001$) and confidence in assessing barriers to care for patients with disability ($p < .001$)," showing the large impact that disability education can have on medical students (Borowsky et al.).

In addition to incorporating disability education directly into medical studies, it is important for medical schools to engage with disability culture and have better outreach to disability communities outside of medicine. Following the principle of disability justice "leadership of those most impacted" and disability justice's stance of "nothing about us without us," it is critical to engage with individuals of diverse physical and mental disabilities. By

gaining an appreciation for disability culture and the diversity of disabled people's values and experiences with health, clinicians can be more empathetic to the unique wishes and concerns of disabled people they treat.

It is crucial for medical schools to increase disability representation within medicine itself. According to the Centers for Disease Control and Prevention, twenty-six percent of American adults have a disability, yet a mere 3.1% of physicians are estimated to be disabled (Nouri et al.). People with physical or sensory disabilities constitute just .5% of medical graduates, showing how inaccessible medical education is (Blauwet). It is important to note that this could be an underestimate since disabilities are often underreported, as people fear they will be discriminated against if they disclose their disability (Nouri et al.; Blauwet). Disabled physician Cheri Blauwet explains that "a diverse physician workforce helps reduce bias among physicians and improves patient care." An increase in disabled doctors also makes people with disabilities more comfortable with their care and could help lead to less discrimination of disabled people. Dr. Gregory Snyder, a doctor at Brigham and Women's Hospital in Boston who became disabled after a spinal cord injury in medical school, explains that if he were not disabled, "'I would have been this six-foot-tall, blond-haired, blue-eyed Caucasian doctor standing at the foot of the bed in a white coat'" (Khullar). He noted, "'Now I'm a guy in a wheelchair sitting right next to my patients. They know I've been in that bed just like they have. And I think that means something'" (Khullar).

Dr. Gregory Snyder treating a patient at Brigham and Women's Hospital

[Image Description: A color photograph of a male doctor talking to a patient in the patient's room. The doctor is white, has blonde hair and blue eyes, and is a wheelchair user. He is wearing a black jacket with the hospital's name, (Brigham and Women's Hospital), his specialty (Internal Medicine), and name listed on it in small white letters. He is also wearing dark pants and a blue lanyard attached to a red card. The patient is to the right in the picture, with his or her back to the camera. The patient is wearing a white and red shirt and has black hair with yellow braids in it. The exam room has a computer to the right, the door in the far back, a sink and drawer to the left, and bed in the front.]

Although medical schools have made some progress in enrolling more Americans of races/ethnicities underrepresented in medicine, disabled Americans remain neglected in recruitment efforts (Waliany). Many disabled physicians became disabled during or after medical school. Lisa Iezzoni was a student at Harvard Medical School when she was diagnosed with

multiple sclerosis (Gordon). One day, when she scrubbed in on a surgery, the surgeon told her that she had "'no right to go into medicine because [she] lacked the most important quality in medicine,'" which was "'24/7 availability'" due to her disability (Gordon). Although Iezzoni graduated medical school, she didn't have the support she needed to work as a doctor, with the Americans with Disabilities Act not even having passed yet (Gordon). Although rights of disabled people are better protected now, medicine continues to have a culture that honors overworking oneself and is not accommodating to people with disabilities (Gordon). Sleep-deprived residents are expected to work an unrealistic number of hours, which is known to worsen patient outcomes. Iezzoni now is a professor of medicine at Harvard and had a career in health policy research, with part of her research focusing on combating disparities in health care for disabled people (Gordon). Despite the barriers they face by ableism within medical education and practice, a growing number of disabled people are pursuing medical degrees. Lisa Meeks, a psychologist at Michigan Medicine who specializes in disabilities in medical education and practice, started a social media campaign #DocsWithDisabilities to inspire more disabled people to pursue medical degrees (Gordon). This campaign has helped drive culture change in medicine to normalize disabled physicians (Gordon). Both changing cultural attitudes and implementing institutional changes, such as allowing for broader interpretation of the technical standards of medical school and better enforcing accomodations, are needed to increase disabled representation in medicine (Waliany).

#DocsWithDisabilities Twitter post featuring Ian DeAndrea-Lazarus, a deaf MD/PhD candidate at Rochester School of Medicine.

Caption from the Twitter post: "Is training and employing #DocsWithDisabilities, including Deaf and hard of hearing individuals, on your radar? #DeafInHealthcare"

[Image Description: A black-and-white photograph of a male doctor displayed to the left of a blue box with white text. The man has a buzz cut, beard, and mustache, and he is wearing a dress shirt and tie with a white lab coat. The lab coat has the University of Rochester School of Medicine logo on one side and various gadgets in the pocket of the other side. The text in the blue box to the right reads: "It's not very often a Deaf person receives health care from a Deaf provider. This needs to change. Patients deserve to receive high-quality care from someone who has lived the same experience, shares their language, and can truly understand their needs. Greater representation in medicine is sorely needed. Ian DeAndrea-Lazarus, M.P.H. / M.D. -

Ph.D. Candidate / Deaf Consumer / Rochester, NY / #DeafinHealthcare." The blue box has a logo in the bottom left corner that says "2axend."]

The American health care and medical education systems remain largely inaccessible and discriminatory. Minorities face health disparities due to the capitalist nature of American health care and a flawed education system. The principles of disability justice can be employed in the medical education curriculum at all levels to not only make medical education more accessible for disabled people but also for other disadvantaged minorities. Sidney Kimmel Medical College demonstrates how the natural sciences can be better integrated with a broader understanding of community health and health equity to train providers to be sensitive to both the pathological and social factors impacting health. Rory Seymour has pioneered the incorporation of disability education into a standard medical education at SKMC, which could be replicated nationally. Medical schools engaging with all aspects of the disability community and actively working to increase disabled representation within medicine will help to combat the medical disparities disabled Americans face. Disabled individuals themselves are leading the way and helping us all fight for a more equitable future.

Final note:

I highly recommend searching #docswithdisabilities on Twitter to hear more stories from disabled (aspiring) physicians! I unfortunately don't have room in my essay to share more, but one in particular I recommend viewing can be found at the link below (it's a video): https://twitter.com/Chelsea_Roberge/status/1362490206021107714?s=20&t=0TpvM1pNl_CPfW5omwd12w. The video demonstrates inherent ableism within the Association of American Medical Colleges (AAMC), the company that develops the MCAT and medical school

application (AMCAS). Also, more information/resources can be found from my sources on the following pages.

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